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EXAMINER
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SHERMAN, STEPHEN G

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/748,684	Applicant(s) FITZMAURICE ET AL.	
	Examiner Stephen G. Sherman	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This office action is in response to the amendment filed the 12 October 2007.

Claims 1-38 are pending.

### *Response to Arguments*

2. Applicant's arguments filed have been fully considered but they are not persuasive.

On page 8, the applicant argues the rejection on claim 15-16 under 35 U.S.C § 112, 2<sup>nd</sup> paragraph. First, the applicant argues that for claim 15, claim 11 is about positioning and claim 15 is about orientation and control. The applicant then states that claim 16 is traversed for the same reason as claim 15. The examiner respectfully disagrees. Claim 11 does contain a limitation regarding the positioning of the function control, however, claim 11 also have a limitation regarding the shape of the control, where it says the SHAPE conforms for a motion arc cause by motion of an arm about an elbow. Claim 12, then states that the control comprises plural controls ALIGNED along the arc. Thus the controls are aligned along an arc of the arm about and elbow. Claim 15 then requires are SHAPED to conform to a wrist arc. Thus the rejection is proper because claim 15 contradicts claims 11 and 12, which state that the controls are shaped about the motion arc of the elbow, not the wrist. As for claim 16, claim 16 does not even state anything about orientation and only that the control ahs plural controls

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aligned along an arc intersecting the motion arc. Therefore, the claims are still indefinite because the claims still fail to clearly indicate what the applicant is attempting to claim.

On page 9 of the applicant's response the applicant argues that the amendment to independent claims 1, 11, 23, 25, 29, 30, 33 and 36 overcome the rejection by the references. Specifically, the applicant argues that Miettinen is about movement in a space surrounding the user, and that the user must turn completely around to access location 18 of figure 1 followed by location 19, and that the amendment states that the display is "located on a single side of the user". While the examiner agrees that Miettinen does not teach the amended feature, the rejection was based upon a combination of references, and the primary reference, Anderson, does teach the newly added feature.

On page 9, the applicant then argues the rejection of claims 26 and 28 for the same reasons as claims 1, 11, 23, 25, 29, 30, 33 and 36, and for the same reasons, the combined reference do teach the newly added feature, where Ono discloses the newly added feature, as explained in the rejection below.

On pages 9 and 10 the applicant argues the rejection of claim 22 for the same reasons as recited above, and for the same reasons recited above by the examiner, the combined reference do teach the newly added feature.

***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed user natural motion stroke (that the arc shaped control zone is aligned) additionally comprising a finger motion curve, a shoulder motion curve and a combination of two or more of the curves of claim 7, the claimed interface element graphic only aligned to a natural user motion of independent finger motion of claim 32, the claimed arc shape interface aligned to a natural user motion produced by only rotation of a user elbow of claim 37, and the claimed arc shaped interface element aligned to a natural user motion produced by only rotation of a user wrist of claim 38, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. Claims 32-33 and 37-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 32 states: "an interface element graphic aligned with the control zone and indicating the function with the interface graphic and control zone only aligned to a natural motion of independent finger motion", claim 37 states: "an arc shaped interface element graphic aligned with the arc shaped control zone indicating the function with the arc shaped interface graphic and the arc shaped control zone aligned to a natural user motion produced by only rotation of a user elbow", and claim 38 states: "an arc shaped interface element graphic aligned with the arc shaped control zone indicating the function with the arc shaped interface graphic and the arc shaped control zone aligned to a natural user motion produced by only rotation of a user wrist". These limitations

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were not described in the specification. The specification instead describes that the invention provides for use of a combination of a number of arcs, and using this combination to make a single arc, however, nowhere in the specification does not describe of using ONLY independent finger, elbow or wrist motion. Therefore, the newly added limitations are not described in the specification in such a way to reasonably convey to one skilled in the art at the time the applicant was filed that the inventors has possession of the claimed invention.

Further, claim 33, which depends from claim 32, states that the user natural motion further comprises a zone access motion comprising one of an elbow motion curve, a wrist motion curve and a shoulder motion curve in combination with the finger motion, which means that the user natural motion is not aligned only to independent finger motion.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 7 and 15-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites that the user natural motion stroke additionally comprises a finger motion curve, a shoulder motion curves and a combination of two or more curves" which renders the claim indefinite because claim 5 requires only a curve determined by a

stroke, which does not cover multiple curves requiring multiple strokes. Therefore it is unclear whether there is only a single curve or multiple curves.

Claim 15 recites the limitation "wherein the controls are oriented and shaped to conform to a wrist arc caused by a hand moving about a wrist of the user." This limitation is indefinite because claim 11 states that the "function control...arc shape conforms to a motion arc of a hand caused by motion of an arm about an elbow of the user." Therefore the controls are already conformed to a motion of an elbow not the motion of a wrist and thus the claim limitation is indefinite.

Claim 16 recites the limitation: "a function control positioned on the display responsive to the location of the cursor, having a interface graphic indicating a function of the control and having an arc shape conforming to a motion arc of a hand caused by motion of an arm about an elbow of the user, wherein the control comprises plural controls and the controls are aligned along an arc intersecting the motion arc at 90 degrees." This limitation is indefinite because the claim first states that the function control has "an arc shape conforming to a motion arc of a hand caused by motion of an arm about an elbow of the user", then the claim recites that "the control comprises plural controls and the controls are aligned along an arc intersecting the motion arc at 90 degrees. Thus the claim is unclear as to whether the controls are aligned along the motion arc or whether the controls are aligned along an arc perpendicular to the motion arc. The applicant's specification discloses that there are controls aligned along an arc intersecting the motion arc at 90 degrees and that there are separate controls aligned along the motion arc, however, the specification does not describe how the same



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controls can be located both on the motion arc and at the same time be located on an arc perpendicular to the motion arc. Thus the claim is rendered indefinite.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (US 5,828,360).

***Regarding claim 32***, Anderson et al. disclose a display, comprising:

a control zone for a function of an interface (Figures 5a and 5b show the disc menu 53 which is an arc shaped control zone.); and

an interface element graphic aligned with the control zone and indicating the function (Figures 5a and 5b show that the disc menu 53 has an arc, while Figure 3 shows that the menu comprises interface elements 31a through 31h which are arranged in an arc shape around the control zone. Figure 3 shows that every interface element 31a-31h indicated the function of the element, i.e. scan, send call, etc.)

with the interface graphic and control zone aligned to a natural user motion of independent finger motion (Figures 2a and 2b show that the shape of the interface menu allows for a natural motion of a user to be used about a user's wrist. Figure 3 shows the controls 32 which result from choosing menu item 31c, which would require independent finger motion relative to the movement of the wrist, meaning that that controls 32 are position aligned to allow for a natural motion of independent finger motion to be used in side of the wrist arc.).

Anderson et al. fails to teach the interface graphic and control zone only aligned to a natural user motion of independent finger motion, however, since the applicant does not describe any specific advantage to this alignment in the specification, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to align the arc based only on independent finger motion in order to allow for a user to reach the controls using a stationary wrist.

**Regarding claim 33**, Anderson et al. disclose a display as recited in claim 32, wherein the user natural motion further comprises a zone access motion comprising one of an elbow motion curve, a wrist motion curve and a shoulder motion curve in

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combination with the finger motion (Figures 2a, 2b and 3 show that the wrist moves, therefore there is a zone access motion that is based on a wrist motion, meaning that the entire motion is based on a combination of these two motions.).

10. Claims 1-14, 17-21, 23, 25, 29-31 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (US 5,828,360) in view of Miettinen et al. (US 2002/0054175).

**Regarding claim 1**, Anderson et al. disclose a display located on a single side of a user (Figures 1-3 show that the display is located only on a single side of the user.), comprising:

an arc shaped control zone for a function of an interface located on the single side (Figures 5a and 5b show the disc menu 53 which is an arc shaped control zone.); and

an arc shaped interface element graphic located on the single side, aligned with the arc shaped control zone (Figures 5a and 5b show that the disc menu 53 has an arc, while Figure 3 shows that the menu comprises interface elements 31a through 31h which are arranged in an arc shape around the control zone.) and indicating the function (Figure 3 shows that every interface element 31a-31h indicated the function of the element, i.e. scan, send call, etc.)

with the arc shaped interface graphic and the arc shaped control zone aligned to a natural user motion of a rotation of a user's wrist (Figures 2a and 2b show that the

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shape of the interface menu allows for a natural motion of a user to be used with the user rotating their wrist.).

Anderson et al. fail to explicitly teach that the arc is aligned to a natural user motion produced by rotation of a user elbow or rotation of the user elbow and rotation of a user wrist.

Miettinen et al. disclose of an arc shaped control zone that is aligned to a natural user motion produced by rotation of a user elbow (Figure 1 and paragraph [0066]).

Therefore, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to make the arc shaped graphic taught by Anderson et al. aligned to a natural user motion produced by rotation of a user elbow as taught by Miettinen et al. in order to provide a comfortable natural feeling to the user when operating the interface that helps to reduce fatigue and user injury caused by unnatural movements.

***Regarding claim 2,*** Anderson et al. and Miettinen et al. disclose a display as recited in claim 1.

Anderson et al. also disclose wherein the alignment orients the graphic and zone with the motion (Figures 2a and 2b show the menu is aligned with a motion of a user, as explained above.).

***Regarding claim 3,*** Anderson et al. and Miettinen et al. disclose a display as recited in claim 1.

Anderson et al. also disclose wherein the alignment follows the natural user motion (Figures 2a and 2b show the menu is aligned with a motion of a user, as explained above.).

**Regarding claim 4**, Anderson et al. and Miettinen et al. disclose a display as recited in claim 1.

Anderson et al. also disclose wherein the alignment positions the graphic and zone at a location accessible via the natural user motion (Figures 2a and 2b show the menu is aligned with a motion of a user, as explained above.).

**Regarding claim 5**, Anderson et al. and Miettinen et al. disclose a display as recited in claim 1.

Anderson et al. also disclose wherein the natural user motion comprises a curve determined by a stroke of the user on the display (Figures 2a and 2b show the menu is aligned with a motion of a user, as explained above.).

**Regarding claim 6**, Anderson et al. and Miettinen et al. disclose a display as recited in claim 5.

Anderson et al. also disclose wherein the curve includes natural motion variations (Figures 2a and 2b show the menu is aligned with a motion of a user, as explained above, where variations between a left handed and right handed person may be taken into account as explained in Figures 4a and 4b.).

**Regarding claim 8**, Anderson et al. and Miettinen et al. disclose a display as recited in claim 7.

Anderson et al. also disclose wherein the curve is a curve determined by a single user (Figure 2a and 2b show that there is only a single user using the menu and therefore the curve is only based upon one user.).

**Regarding claim 9**, Anderson et al. and Miettinen et al. disclose a display as recited in claim 1.

Anderson et al. also disclose a display further comprising an interface location at which the zone and graphic are positioned (Figures 5a and 5b shows that an interface location is where the zone and graphic are positioned.).

**Regarding claim 10**, Anderson et al. and Miettinen et al. disclose a display as recited in claim 9.

Anderson et al. also disclose wherein the interface location is specified by a cursor positioned by the user (Figures 5a and 5b show that the menu is located based upon where the cursor 54 is positioned.).

**Regarding claim 11**, Anderson et al. disclose a graphical user interface, comprising:

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a cursor positioned on a display by a user at a location the display located on a single side of a user (Figures 5a and 5b show a cursor 54 at a location specified by a user. Figures 1-3 show that the display is located only on a single side of the user.); and

a function control positioned on the display responsive to the location of the cursor (Figures 5a and 5b show that the menu 53 is positioned on the display 50 based on the position of the cursor 54.), and

having an arc shaped interface graphic indicating a function of the control (Figures 5a and 5b show that the disc menu 53 has an arc, while Figure 3 shows that the menu comprises interface elements 31a through 31h which are arranged in an arc shape around the control zone. Figure 3 shows that every interface element 31a-31h indicated the function of the element, i.e. scan, send call, etc.).

Anderson et al. fail to explicitly teach of the arc shape conforming to a motion arc of a hand caused by motion of an arm about an elbow of the user.

Miettinen et al. disclose of an arc shaped control zone that is aligned to a natural user motion produced by rotation of a user elbow (Figure 1 and paragraph [0066]).

Therefore, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to make the arc shaped graphic taught by Anderson et al. aligned to a natural user motion produced by rotation of a user elbow as taught by Miettinen et al. in order to provide a comfortable natural feeling to the user when operating the interface that helps to reduce fatigue and user injury caused by unnatural movements.

**Regarding claim 12**, Anderson et al. and Miettinen et al. disclose an interface as recited in claim 11.

Anderson et al. also disclose wherein the control comprises plural controls and the controls are aligned along the arc (Figures 3, 5a and 5b show that there are plural controls 31a-31h that are aligned around the arc.).

**Regarding claim 13**, Anderson et al. and Miettinen et al. disclose an interface as recited in claim 12.

Anderson et al. also disclose wherein a default control is positioned under the cursor at a particular instance (Figure 3 shows that the controls 31a-31h, which are default controls to the menu, can be positioned under the cursor at a particular instance in which a user moves the cursor over the control.).

**Regarding claim 14**, Anderson et al. and Miettinen et al. disclose an interface as recited in claim 12.

Anderson et al. also disclose wherein the controls can be one of re-oriented and moved (Figures 5a and 5b show that the menu can be moved.).

**Regarding claim 17**, Anderson et al. and Miettinen et al. disclose an interface as recited in claim 11.



Anderson et al. also disclose wherein the control comprises plural controls (Figure 3, controls 31a-31h.) and the shape of the sides of each of the controls is one of rectilinear, arc shaped, wedge shaped and triangular shaped (Figures 3 and 8 show that each of the controls can be characterized as being rectilinear, arc shaped, wedge shaped and triangular shaped.).

**Regarding claim 18**, Anderson et al. and Miettinen et al. disclose an interface as recited in claim 11.

Anderson et al. also disclose the interface further comprising an overflow interface positioned responsive to the motion arc (Figure 3 shows overflow interface 32 which is positioned responsive to the motion arc.).

**Regarding claim 19**, Anderson et al. and Miettinen et al. disclose an interface as recited in claim 11.

Anderson et al. also disclose wherein text of the control is rectilinear aligned with a display (Figures 3, 5a and 5b show that the text of the control such as Send, Call and ABC are rectilinear with a display.).

**Regarding claim 20**, Anderson et al. and Miettinen et al. disclose an interface as recited in claim 19.

Anderson et al. also disclose wherein the overflow interface is natural motion arc shaped (Figure 3.).

**Regarding claim 21**, Anderson et al. and Miettinen et al. disclose an interface as recited in claim 12.

Anderson et al. also disclose wherein the control is oriented to an extended arc (Figure 3 shows that the arc is “extended” into a circular shape.).

**Regarding claims 23 and 25**, Anderson et al. disclose a method and a computer readable storage for controlling a computer, comprising:

determining a position of a cursor as designated by a user (Figures 5a and 5b show that the position of the cursor 54 is determined on the screen.), and

positioning an arc shaped graphical user interface on a single side of a user responsive to the position where the arc of the shape is defined by a natural user motion (Figures 5a and 5b show that the position of the arc shaped menu interface 53 is responsive to the position of the cursor 54. Figures 2a and 2b show that the shape of the interface menu allows for a natural motion of a user to be used. Figures 1-3 show that the display is located only on a single side of the user.).

Anderson et al. fail to explicitly teach of the arc of the shape defined by a natural user motion caused by motion of an arm about an elbow of the user.

Miettinen et al. disclose of an arc shaped control zone that is aligned to a natural user motion produced by rotation of a user elbow (Figure 1 and paragraph [0066]).

Therefore, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to make the arc shaped graphic taught by Anderson et al.

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aligned to a natural user motion produced by rotation of a user elbow as taught by Miettinen et al. in order to provide a comfortable natural feeling to the user when operating the interface that helps to reduce fatigue and user injury caused by unnatural movements.

**Regarding claim 29**, Anderson et al. disclose an apparatus, comprising:

a display on a single side of a user (Figure 1, item 11. Figures 1-3 show that the display is located only on a single side of the user.); and

a computer producing an arc shaped graphical user interface on the display where the arc of the shape is defined by a natural user motion (Figure 1 and column 4, lines 41-63 and Figures 2a, 2b and 3 show that the graphical user interface on the display 11 is defined by a natural user motion.).

Anderson et al. fail to explicitly teach of the arc of the shape defined by a natural user motion caused by motion of an arm about an elbow of the user.

Miettinen et al. disclose of an arc shaped control zone where the arc of the shape defined by a natural user motion caused by motion of an arm about an elbow of the user (Figure 1 and paragraph [0066]).

Therefore, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to make the arc shaped graphic taught by Anderson et al. aligned to a natural user motion produced by rotation of a user elbow as taught by Miettinen et al. in order to provide a comfortable natural feeling to the user when

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operating the interface that helps to reduce fatigue and user injury caused by unnatural movements.

**Regarding claim 30**, Anderson et al. disclose a display, comprising:

a control zone for a function of an interface on a single side of a user (Figures 5a and 5b show the disc menu 53 which is an arc shaped control zone. Figures 1-3 show that the display is located only on a single side of the user.); and

an interface element graphic aligned with the control zone and indicating the function (Figures 5a and 5b show that the disc menu 53 has an arc, while Figure 3 shows that the menu comprises interface elements 31a through 31h which are arranged in an arc shape around the control zone. Figure 3 shows that every interface element 31a-31h indicated the function of the element, i.e. scan, send call, etc.)

with the interface graphic and control zone aligned to a natural user motion (Figures 2a and 2b show that the shape of the interface menu allows for a natural motion of a user to be used.).

Anderson et al. fail to explicitly teach the interface graphic and control zone aligned to a natural user motion of an elbow motion.

Miettinen et al. disclose of an arc shaped control zone that is aligned to a natural user motion of an elbow motion (Figure 1 and paragraph [0066]).

Therefore, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to make the arc shaped graphic taught by Anderson et al. aligned to a natural user motion produced by rotation of a user elbow as taught by

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Miettinen et al. in order to provide a comfortable natural feeling to the user when operating the interface that helps to reduce fatigue and user injury caused by unnatural movements.

**Regarding claim 31**, Anderson et al. and Miettinen et al. disclose a display as recited in claim 30, wherein the user natural motion stroke comprises one of an a wrist motion curve, a finger motion curve and a shoulder motion in combination with the elbow motion (The examiner understands that if the elbow is moving then the wrist is moving, therefore the user motion stroke would comprise the wrist in combination with the elbow.).

**Regarding claim 34**, Anderson et al. disclose a display on a single side of a user (Figures 1-3 show that the display is located only on a single side of the user.), comprising:

a control zone for a function of an interface on the single side of a user (Figures 5a and 5b show the disc menu 53 which is an arc shaped control zone.); and

an interface element graphic aligned with the control zone and indicating the function (Figures 5a and 5b show that the disc menu 53 has an arc, while Figure 3 shows that the menu comprises interface elements 31a through 31h which are arranged in an arc shape around the control zone. Figure 3 shows that every interface element 31a-31h indicated the function of the element, i.e. scan, send call, etc.)

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with the interface graphic and control zone aligned to a natural user motion (Figures 2a and 2b show that the shape of the interface menu allows for a natural motion of a user to be used.).

Anderson et al. fail to explicitly teach of the interface graphic and control zone aligned to a natural user motion of a shoulder motion.

Miettinen et al. disclose of an arc shaped control zone that is aligned to a natural user motion of a shoulder motion (Figure 1 and paragraph [0066] explain that one arc corresponds to the moving with straight arms, meaning the movement is about a shoulder.).

Therefore, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to make the arc shaped graphic taught by Anderson et al. aligned to a natural user motion produced by rotation of a user shoulder as taught by Miettinen et al. in order to provide a comfortable natural feeling to the user when operating the interface that helps to reduce fatigue and user injury caused by unnatural movements.

**Regarding claim 35**, Anderson et al. and Miettinen et al. disclose a display as recited in claim 34, wherein the user natural motion stroke comprises one of an elbow motion curve, a wrist motion curve and a finger motion curve in combination with the shoulder motion (The examiner understands that if the shoulder is moving then the wrist is moving, therefore the user motion stroke would comprise the wrist in combination with the shoulder.).

**Regarding claim 36**, this claim is rejected under the same rationale as claim 1.

11. Claims 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono (US 5,559,944) in view of Miettinen et al. (US 2002/0054175).

**Regarding claim 26**, Ono teaches a method, comprising:

allowing a user to make strokes with an input device with the input device located on a single side of a user (Fig. 7. Figures 6 and 11 shows that the display is located on a single side of the user.);

determining an arc from the strokes (Fig. 7); and

laying out a graphical user interface, including controls, to conform to the arc (see col. 3, lines 16-24).

Ono fails to explicitly teach of allowing a user to make strokes with an input device caused by motion of an arm about an elbow of the user.

Miettinen et al. disclose of an arc shaped control zone that is aligned to a natural user motion of an elbow motion (Figure 1 and paragraph [0066]).

Therefore, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to allow the user to make the arc shaped graphic taught by Ono by rotation of a user elbow as taught by Miettinen et al. in order to provide a comfortable natural feeling to the user when operating the interface that helps to reduce fatigue and user injury caused by unnatural movements.

**Regarding claim 28**, Ono et al. and Miettinen et al. disclose a method as recited in claim 26.

Ono also discloses wherein plural users are allowed to make strokes individually at different times and the arc is determined from the strokes of the plural users (Column 3, lines 16-24 explain that each individual, i.e. plural users, make arcs and then the arc the menu is obtained by using these strokes.).

12. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (US 5,828,360) in view of Miettinen et al. (US 2002/0054175) and further in view of Ono et al. (US 5,559,944).

**Regarding claim 24**, Anderson et al. and Miettinen et al. disclose a method as recited in claim 23.

Anderson et al. and Miettinen et al. fail to teach the method further comprising determining whether the user has specified a custom arc and positioning one of a custom and standard arc shaped interface responsive to the determination.

Ono et al. disclose a method further comprising determining whether the user has specified a custom arc (Column 3, lines 16-24) and positioning one of a custom and standard arc shaped interface responsive to the determination (Column 3, lines 16-24, where the custom arc shaped interface is positioned.).



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Therefore, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to make the arc shaped interface taught by the combination of Anderson et al. and Miettinen et al. have a user customized arc shaped as taught by Ono et al. in order to allow for a user to use the interface without causing an unnatural force.

13. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. (US 5,559,944) in view of Miettinen et al. (US 2002/0054175) and further in view of Anderson et al. (US 5,828360).

**Regarding claim 27**, Ono et al. and Miettinen et al. disclose a method as recited in claim 26.

Ono et al. and Miettinen et al. fail to teach the method further comprising: determining a position of a cursor specified by the user; and positioning the interface responsive to the position; and allowing the user to activate a function of the interface.

Anderson et al. disclose a method comprising:

determining a position of a cursor specified by the user (Figures 5a and 5b show that the position of the cursor 54 is determined on the screen.); and

positioning the interface responsive to the position (Figures 5a and 5b show that the position of the arc shaped menu interface 53 is responsive to the position of the cursor 54.); and

allowing the user to activate a function of the interface (Figures 3, 5a and 5b show that the user can use the cursor to activate one of the items 31 on the interface.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the interface positioning method taught by Anderson et al. with the method taught by the combination of Ono et al. and Miettinen et al. in order to produce the menu in the area where the user is operating allowing for the use to use hand movements that the user can make and remember easily.

14. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (US 5,828,360) in view of Miettinen et al. (US 2002/0054175) and further in view of Keely, JR et al. (US 2006/0136840)

**Regarding claim 22**, Anderson et al. disclose a graphical user interface for a tablet personal computer having a stylus input system, comprising:

a cursor positioned on a display of the tablet personal computer by a user at a location on the display designed by the stylus (Figures 5a and 5b show a cursor 54 at a location specified by a user. Figure 1 shows that the input can be made by a stylus 14, see also Figure 6. Column 4, lines 48-50 state that the touch sensitive pad and the viewscreen can be integrated to form a touch sensitive screen, thus making it a tablet personal computer, where the cursor would be positioned on the display.);

a function control positioned on the display responsive to the location of the cursor (Figures 5a and 5b show that the position of the arc shaped menu interface 53 is responsive to the position of the cursor 54.),

having a interface graphic indicating a function of the control (Figures 5a and 5b show that the disc menu 53 has an arc, while Figure 3 shows that the menu comprises interface elements 31a through 31h which are arranged in an arc shape around the control zone. Figure 3 shows that every interface element 31a-31h indicated the function of the element, i.e. scan, send call, etc.) and

having a graphic shape and position conforming to a natural motion arc of a hand caused by motion of the hand moving about a wrist of the user (Figures 2a and 2b show that the shape of the interface menu allows for a natural motion of a user to be used with the user rotating their wrist.),

having plural controls with a default control positioned under the cursor (Figure 3 shows that the controls 31a-31h, which are default controls to the menu, can be positioned under the cursor at a particular instance in which a user moves the cursor over the control.), controls aligned along the arc (Figure 3 shows items 31a-31h aligned with the arc.) and

an overflow interface and shaped positioned responsive to the motion arc (Figure 3 shows overflow interface 32 which is positioned responsive to the motion arc.).

Anderson et al. fail to teach of the interface graphic having a graphic shape and position conforming to a natural motion arc of a hand caused by motion of an arm about an elbow.

Miettinen et al. disclose of an interface graphic having a graphic shape and position conforming to a natural motion arc of a hand caused by motion of an arm about an elbow (Figure 1 and paragraph [0066]).

Therefore, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to make the arc shaped graphic conformed to a wrist motion taught by Anderson et al. aligned to a natural user motion produced by rotation of a user elbow as taught by Miettinen et al. in order to provide a comfortable natural feeling to the user when operating the interface that helps to reduce fatigue and user injury caused by unnatural movements.

Anderson et al. and Miettinen et al. fail to teach controls aligned along a counter arc intersecting the motion arc at 90 degrees and where the controls are shaped responsive to the natural motion arc with natural variations.

Keely, JR et al. disclose of a pop-up menu that is aligned along an arc with respect to a central default control wherein the controls are shaped responsive to the natural motion with natural variations (Figures 10-12 show the pop-up menu responsive to the selection of the color control, where the controls 132, 134, 136, 138 and 140 are aligned around an arc that is responsive to a natural motion of a user which depends on whether a use is right handed or left handed, i.e. it is based upon natural variations.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the pop-up circular menu taught by Keely JR, et al. with the interface taught by the combination of Anderson et al. and Miettinen et al. such that when one of the controls 31a-31h are selected an arc shaped menu pops-up,

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making the two arcs therefore intersect at a 90 degrees angle, in order to allow for the user's hand not to block the user's view of the selections.

### ***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen G. Sherman whose telephone number is (571) 272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS

6 November 2007

AMR A. AWAD  
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read "Amr Awad", with a stylized flourish extending to the right.